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Perspectives in Artificial Intelligence

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Abstract

We situate the historical and fundamental perspective of AI, whose thematic coverage goes far beyond Deep Learning, a topic that is a bit too much emphasized by these days. Defender of a strong AI, we remind the connectionist and cognitivist approaches, the importance of the semantics that AI associates with the data, and the different AI themes to be integrated.

We present our vision of the present and future impact of AI through several application domain which are useful to the citizens, including transport, daily life and society. We discuss the impact on economy and companies. We look at the main AI themes in different countries, including USA, China, Japan, and report about current programs, prospects and expectations.

We identify five major challenges for a responsible deployment of AI: human utility and user representation, ethics by design, new communication models and tools, structure emergence and scaling, and explicability. Our subject deals with AI in general. We instantiate the concepts in the area of multi-agent systems. We illustrate the lecture with many facts and examples.

References

- Yves Demazeau (& Francis Van Aeken), “Merging Physical World and Virtual World”, Strategic Planning Workshop on Future and Emerging Research Challenges in Intelligent Global Computing, Brussel, May 1998.
- Yves Demazeau, “Artificial Intelligence: State of the Art, Key Applications, Vision of the Future”, Technology Foresight Forum 2016 on Artificial Intelligence, OECD, Paris, 2016.

Curriculum Vitae

Yves Demazeau received his PhD in Computer Science at INP Grenoble Institute in 1986. He has been distinguished ECCAI Fellow in 2010 and Doctor Honoris Causa at University of Southern Denmark Odense in 2017. He is Director of Research at CNRS since 1988, and Invited Professor at USD since 2002. Yves Demazeau is one of the founders of the Multi-Agent Systems (MAS) area. He has edited 39 books or proceedings, has authored or co-authored 190 papers and has been invited for 54 lectures, 22 tutorials, and 196 seminars. He has (co-)advised 57 MSc students and 29 PhD students and served in 278 conference program committees. He is conducting the PAAMS series since 2009 and the National AI Platform PFIA since 2013. He is Editor-in-Chief of the French AI Journal (RIA) since 2010 and President of the French Association for Artificial Intelligence (AFIA) since 2011.